REMARKS

This response is submitted in reply to the Office Action mailed on March 21, 2006. Claims 1-9 are pending in this application. Claims 1-8 have been amended. New claim 10 has been added. No new matter has been added by this response.

Claims 1-4 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Specifically, the Patent Office points out that the term "invention" in line 8 of claim 1 should be "inversion." Applicant has amended claim 1 to change the term "invention" to "inversion."

Claim 1-9 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,396,468 to Matsushima et al. ("Matsushima"). Applicant respectfully traverses this rejection.

Claim 1 is directed to a method for driving an LCD in a dynamic inversion manner including the steps of dividing a full frame into a plurality of polarity blocks, where each of the polarity blocks covers 2n horizontal scanning lines, and where n is a positive integer. The method includes generating an original polarity inversion pattern which has positive polarities for n pixels in each column line of each polarity block and negative polarities for the other n pixels in each column line of each polarity block and generating a polarity inversion group having 2n polarity patterns which respectively record polarity distributions obtained by sequentially rotating each row of each of the polarity blocks of the original polarity pattern under a DC balance requirement. The method also includes selecting the 2n polarity patterns or a plurality of polarity patterns from the polarity inversion group for driving the pixels of the full frame.

Matsushima fails to disclose or suggest a full frame that is divided into a plurality of polarity blocks where each of the polarity blocks has 2n horizontal scanning lines as in the claimed invention.

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In the Office Action, the Patent Office states that the four scanning lines G1 to G4 shown in Figs. 10(a)-10(d) of Mastsushima represent one of the polarity blocks of the claimed invention. However, each of the frames shown in Figs. 10(a)-10(d) have two unequal blocks where one block includes four scanning lines G1-G4 and the other block includes two scanning lines G5-G6. (Col. 2, lines 25-67). On the contrary, each of the polarity blocks of the full frame of the claimed invention includes the same number of the horizontal scanning lines. In other words, in the claimed invention, the sizes of all of the polarity blocks of a full frame are equal or the same.

In fact, Figs. 10(a)-10(d) of Matsushima disclose a simultaneous two-line scanning method (see Col. 2, lines 25-68). In the first frame (an odd frame) of Fig. 10(a), the polarities of the gate buslines G1-G6 are respectively set to +,+,-,-,+,+. Afterward, in the second frame (an even frame) shown in Fig. 10(b), the polarities of the even-numbered gate buslines G2, G4 and G6 are respectively reversed from those in the first frame, and respectively set to -,+,-, while the polarities of the odd-numbered gate buslines G1, G3 and G5 are kept at the same polarity as that in the first frame, and set to +,-,+. Similarly, in the subsequent odd frame (the third frame) shown in Fig. 10(c), the polarities of the odd-numbered gate buslines G1, G3 and G5 are respectively reversed from that in the previous even frame (the second frame) shown in Fig. 10(b), while the polarities of the even-numbered gate buslines G2, G4 and G6 are kept at the same polarity as that in the previous even frame. Similarly, the driving method shown in Fig. 10(d) can be deduced by analogy.

In contrast, amended claim 1 discloses a full frame that is divided into a plurality of polarity blocks where each of the polarity blocks covers 2n horizontal scanning lines. That is, each of the polarity blocks of the full frame have the same number of scanning lines (all of the polarity blocks are

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the same size). Furthermore, amended claim 1 recites generating an original polarity pattern which has positive polarities for n pixels in each column line of each of the polarity blocks of a full frame and negative polarities for the other n pixels in each column line of each of the polarity blocks. This means that each column of each of the polarity blocks of the full frame has the same number of positive polarities and negative polarities. That is, each column of each of the polarity blocks of the original polarity pattern (a full frame pattern) has the same number of positive polarities and negative polarities.

The method of claim 1 further includes generating a polarity inversion group having 2n polarity patterns which respectively record polarity distributions obtained by sequentially rotating each row of each polarity block of the original polarity pattern under a DC balance requirement. In other words, the claimed invention further provides a systematic method to construct or produce a polarity inversion group having 2n polarity patterns for driving the pixels of a full frame. It should be noted that each of the 2n polarity patterns is a "full frame pattern" which is made up of all the plurality of polarity block patterns, and the polarity inversion group is made up of all the 2n polarity patterns which is respectively produced by the rotation recording method. For example, a first polarity pattern of the 2n (where n=3) polarity patterns of the claimed invention comprises a plurality of the same polarity block patterns, as shown in Fig. 8(a) of the present application, where the first polarity pattern can be regarded as the so-called original polarity pattern as recited in claim 1. Then, a second polarity pattern of the 2n (where n=3) polarity pattern is formed by a plurality of the same polarity block patterns, as shown in Fig. 8(b), in which it reveals that the second polarity pattern recorded the polarity distributions obtained from rotating up each row of each polarity block of the first polarity pattern by one row. Similarly, the rest of the polarity patterns of the 2n polarity pattern can be deduced by analogy. As a result, a polarity

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inversion group including six polarity patterns (where n=3) can be obtained.

Additionally, amended claim 1 further includes a step of selecting the 2n polarity patterns or a plurality of polarity patterns from the polarity inversion group for driving the pixels of the full frame. Thus, one can select all the 2n polarity patterns, such as all the previously described six polarity patterns (where n=3), to alternately drive the pixels of the full frame in one cycle, or select only some of the 2n polarity patterns, such as the second, the fourth and the sixth polarity patterns (where n=3), to alternately drive the pixels of the full frame in one cycle. In other words, during one cycle of all the selected polarity patterns, six or more of the polarity patterns will alternately appear on the LCD panel frame.

Thus, amended claim 1 is directed to a systematic method for producing a polarity inversion group and selecting all or some polarity patterns form the polarity inversion group to drive a full frame, in which the polarity inversion group has 2n polarity patterns and each polarity block of each of the 2n polarity patterns has 2n horizontal scanning lines, where each of the 2n polarity patterns represents a full frame pattern. One of the important features of the claimed invention is that the design number "n" can be 1 or an <u>integer larger than 1</u>.

Furthermore in the claimed invention, each column of each the polarity block of a full frame has positive polarities for n pixels and negative polarities for n pixels (each column of each the polarity block has the same number of positive polarities and negative polarities) which leads to each column of the full frame pattern also having the same number of positive and negative polarities. Accordingly, each column of each of the 2n polarity patterns of the claimed invention has the same number of positive and negative polarities.

Matsushima does not disclose or suggest that each column line of its frames, such as the frames

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shown in FIGS. 10(a) and 10(d), have the same number of the positive polarities and the negative polarities. Furthermore, Matsushima does not disclose or suggest how to divide a full frame pattern or how to explicitly produce a full frame pattern. Moreover, Applicant submits that Matsushima does not disclose or suggest a simultaneous two-line scanning method for driving a full frame as described above or as described in Col. 2, lines 25-68 of Matsushima, so that one skilled in the art could make such an invention. Additionally, Matsushima does not disclose or suggest how to build a systematic method for generating a polarity inversion group having 2n polarity patterns under a DC balance requirement or selecting the 2n polarity patterns or a plurality of polarity patterns from a polarity inversion group for driving the pixels of the full frame.

For at least these reasons, Matsushima does not disclose or suggest all of the elements of amended claim 1. Therefore, Applicant submits that amended claim 1 and claims 2-5, which depend from claim 1, are each patentably distinguished from Matsushima and in condition for allowance.

Amended claim 6 includes similar elements to amended claim 1. Additionally, claim 6 includes the elements of a polarity pattern that records a polarity distribution obtained by rotating x rows of the original polarity block under a DC balance requirement, where "x" is a positive integer and not larger than 2n. That is, amended claim 6 differs from amended claim 1 by rotating only one row. As described above, Matsushima does not disclose or suggest all of the elements of amended claim 1, Furthermore, Matsushima does not disclose or suggest rotating x rows of the original polarity block to generate a polarity pattern under a DC balance requirement as in claim 6.

For at least these reasons, Matsushima does not disclose or suggest all of the elements of amended claim 6. Therefore, Applicant submits that amended claim 6 and claims 7-9, which depend

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from claim 6, are each patentably distinguished from Matsushima and in condition for allowance.

Moreover, dependent claims 2, 3, 7 and 8 state that each polarity pattern in the polarity inversion group is obtained by sequentially rotating up or down each row of each polarity block of the original polarity pattern by one row. For example, in the rotating-up method of claims 2 and 7, the original first row of each of polarity blocks of the original polarity pattern is moved to the last row, the original second row is moved up to the first row, the third row is moved up to the second row, and so forth. In the rotating down method of claims 3 and 8, the original last row of each of polarity blocks of the original polarity pattern is moved to the first row, the original first row is moved down to the second row, the original second row is moved down to the third row, and so forth. In contrast, Matsushima does not disclose or suggest the rotating up method and the rotating down method of the claimed invention.

For these additional reasons, Applicant submits that claims 2, 3, 7 and 8 are each patentably distinguished from Matsushima and in condition for allowance.

Regarding dependent claims 4 and 9, the 2n polarity patterns or the plurality of polarity patterns from the polarity inversion group for driving the pixels are selected randomly. That is, the polarity patterns of the previous frame and the next frame are selected randomly from the polarity inversion group, and thus, the polarity patterns are not displayed the order in which the polarity patterns are generated. Matsushima does not disclose or suggest polarity patterns which are randomly selected from a polarity inversion group.

For these additional reasons, Applicant submits that claims 4 and 9 are each patentably distinguished from Matsushima and in condition for allowance.

New claim 10 depends from amended claim 1. Therefore, Applicant submits that new claim 10

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is patentably distinguished over Matsushima for at least the reasons provided above for amended claim 1 and for the further reasons that Matsushima does not disclose or suggest the novel subject matter of claim 10 in combination with the novel subject matter of amended claim 1.

In light of the above, Applicant respectfully submits that claims 1-9 and new claim 10 are patentable over the art of record because the cited art does not disclose, teach or suggest the subject matter of these claims. Accordingly, Applicant respectfully requests that claims 1-10 be deemed allowable at this time and that a timely Notice of Allowance be issued in this case.

No fees are due. If any other fees are due in connection with this application, the Patent Office is authorized to deduct the fees from Deposit Account No. 19-1351. If such withdrawal is made, please indicate the attorney docket number (33038-404700) on the account statement.

Respectfully submitted,

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